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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,048	12/31/2003	Jeffry Golden	42173-018	8958
29493	7590	04/18/2006	EXAMINER	
HUSCH & EPPENBERGER, LLC 190 CARONDELET PLAZA SUITE 600 ST. LOUIS, MO 63105-3441			MCKANE, ELIZABETH L	
			ART UNIT	PAPER NUMBER
			1744	

DATE MAILED: 04/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/750,048

Applicant(s)

GOLDEN, JEFFRY

Examiner

Leigh McKane

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 January 2006.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 59-72 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 59-72 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

***Restriction***

1. The restriction has been withdrawn in view of the claim amendments.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 59 and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blidschun et al. (US 4,680,163) in view of Bayliss et al. ("The Combined Effect of Hydrogen Peroxide and Ultraviolet Irradiation on Bacterial Spores").

Blidschun et al. teaches a method of decontaminating a contaminated non-conducting surface wherein the method includes providing a conducting backing 13 for the non-conducting surface 15 and spraying an electrically charged photosensitizer (hydrogen peroxide) onto the contaminated surface 15. See col.3, lines 34-44. Blidschun et al. is silent with respect to illuminating the sprayed surface with light having a wavelength of 200-320 nm.

Bayliss et al., however, discloses that the combination of ultraviolet light at 254 nm with hydrogen peroxide "markedly reduced the concentration and time required to produce a kill of 99.99%." See Table 4 and page 269. For this reason, it would have been obvious to one of ordinary skill in the art to combine the step of UV irradiation with hydrogen peroxide contact in the method of Blidschun et al..

4. Claim 61 is rejected under 35 U.S.C. 103(a) as being unpatentable over Richard (US 5,135,721) in view of Sizer et al. (US 5,843,374).

Richard discloses a sterilization apparatus including an apparatus **24** for spraying a sterilant **20** onto a contaminated surface, a light source **12** for illuminating the contaminated surface, and a temperature control system **36** for heating the contaminated surface. Richard does not teach that the temperature control system uses waste heat from the light source.

Sizer et al. teaches that it was known in the art to heat exchange heat produced by a UV lamp in order to cool the lamp. See col.6, lines 47-60. As the light source **12** of Richard is also a UV lamp and would also need to be cooled, it would have been obvious to recover the heat for use in the temperature control system, as an energy saving mechanism.

With respect to the intended use of the device being directed to “spraying a photosensitizer” or “illuminating the sprayed contaminated surface,” it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987).

5. Claims 62-66, 69, and 70 are rejected under 35 U.S.C. 103(a) as being unpatentable over Richard in view of Bayliss et al., Dirksing (US 5,863,497), and Wilkie (US 5,238,709).

Richard discloses a method for decontaminating the surface of a contaminated object, wherein the method includes providing a portable barrier **10** having an entrance **117a** and an exit **117b**, surrounding the object with the barrier when the object is placed therein, spraying a decontaminant onto the object, and illuminating the object. See Abstract; col.3, lines 54-56.

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Richard is silent with respect to an electrically charged photosensitizer, attracting the overspray to the barrier, and illuminating the *sprayed* surfaces of the object.

With respect to using a photosensitizer as the decontaminant, Bayliss et al. teaches the use of the photosensitizer hydrogen peroxide in the art of decontamination. Bayliss et al. discloses that hydrogen peroxide is an effective sterilant, useful against a wide variety of spores, when used both alone and with UV irradiation. See Table 5. As Richard fails to teach any preferred liquid decontaminant, it would have been obvious to use the hydrogen peroxide disclosed by Bayliss et al., as being effective against resistant microorganisms. Moreover, although Richard teaches irradiating the contaminated surface *before* the liquid decontaminant is applied, Bayliss et al. provides motivation to irradiate the contaminated surface after the liquid decontaminant is applied. In fact, Bayliss et al. discloses that the combination of ultraviolet light at 254 nm with hydrogen peroxide “markedly reduced the concentration and time required to produce a kill of 99.99%.” See Table 4 and page 269. For this reason, it would have been obvious to one of ordinary skill in the art to irradiate the contaminated surfaces after they have been sprayed with the hydrogen peroxide in the combination of Richard with Bayliss et al..

Dirksing teaches method similar to that disclosed by Richard. However, in the method of Dirksing the germicidal fluid is electrostatically charged in order to provide an even coating of the germicidal fluid on the surfaces to be decontaminated. See col.2, lines 43-47; col.3, lines 2-12. In order to achieve an even coating on the surfaces to be decontaminated by the method of Richard, one would have found it obvious to electrostatically charge the hydrogen peroxide before applying it to the contaminated surfaces.

Wilkie discloses a method of electrostatically spray coating a surface. Overspray is attracted by a charged backplate **18**. It is deemed obvious to charge the surfaces of the barrier **10**, in the manner disclosed by Wilkie, as Wilkie teaches that doing so allows collection and reuse of the sprayed material (col.4, lines 3-6). As to the barrier being grounded, it would have been an obvious choice if the surface being coated is charged and is not also grounded.

6. Claim 71 is rejected under 35 U.S.C. 103(a) as being unpatentable over Richard, Bayliss et al., Dirksing, and Wilkie as applied to claim 62 above, and further in view of Sizer et al..

Richard discloses a method including providing a temperature control system **36** for heating the contaminated surface. Richard does not teach that the temperature control system uses waste heat from the light source.

Sizer et al. teaches that it was known in the art to heat exchange heat produced by a UV lamp in order to cool the lamp. See col.6, lines 47-60. As the light source **12** of Richard is also a UV lamp and would also need to be cooled, it would have been obvious to recover the heat for use in the temperature control system, as an energy saving mechanism.

7. Claim 72 is rejected under 35 U.S.C. 103(a) as being unpatentable over Richard, Bayliss et al., Dirksing, and Wilkie as applied to claim 62 above, and further in view of Blidschun et al..

The combination above does not disclose treating a non-conducting surface and thus, is silent with respect to providing a conducting backing. Blidschun et al. teaches a method of decontaminating a contaminated non-conducting surface wherein the method includes providing a conducting backing **13** for the non-conducting surface **15** and spraying an electrically charged photosensitizer (hydrogen peroxide) onto the contaminated surface **15**. See col.3, lines 34-44.

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In order to apply the method of the combination to a variety of surfaces, both conducting and non-conducting, it would have been obvious to one of ordinary skill in the art to provide a conducting backing so as to be able to treat non-conducting surfaces, thereby increasing the usefulness of the method.

8. Claims 67 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Richard in view of Bayliss et al..

Richard discloses a method for decontaminating the surface of a contaminated object, wherein the method includes providing a barrier **10** and creating an airflow into the exit **117a** and out of the entrance **132**, spraying a decontaminant onto the object, and illuminating the object. See Abstract; col.3, lines 54-56. Richard is silent with respect to spraying a photosensitizer and illuminating the *sprayed* surfaces of the object.

With respect to using a photosensitizer as the decontaminant, Bayliss et al. teaches the use of the photosensitizer hydrogen peroxide in the art of decontamination. Bayliss et al. discloses that hydrogen peroxide is an effective sterilant, useful against a wide variety of spores, when used both alone and with UV irradiation. See Table 5. As Richard fails to teach any preferred liquid decontaminant, it would have been obvious to use the hydrogen peroxide disclosed by Bayliss et al., as being effective against resistant microorganisms. Moreover, although Richard teaches irradiating the contaminated surface *before* the liquid decontaminant is applied, Bayliss et al. provides motivation to irradiate the contaminated surface after the liquid decontaminant is applied. In fact, Bayliss et al. discloses that the combination of ultraviolet light at 254 nm with hydrogen peroxide “markedly reduced the concentration and time required to produce a kill of 99.99%.” See Table 4 and page 269. For this reason, it would have been

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obvious to one of ordinary skill in the art to irradiate the contaminated surfaces after they have been sprayed with the hydrogen peroxide in the combination of Richard with Bayliss et al..

***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leigh McKane whose telephone number is 571-272-1275. The examiner can normally be reached on Monday-Thursday (5:30 am-2:00 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gladys Corcoran can be reached on 571-272-1214. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**Leigh McKane**  
**Primary Examiner**  
**Art Unit 1744**

elm  
17 April 2006